THE IMPACT OF INTERNET BANKING ON BANK PERFORMANCE IN INDONESIA
(Case Study of Bank Listed on the Indonesia Stock Exchange 2016 – 2018)

Submitted to Fulfill Tasks and Conditions for Obtaining Bachelor Degree of Management at the Faculty of Economics and Business

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B 10A 163 008

DEPARTMENT OF MANAGEMENT DOUBLE DEGREE

ECONOMIC AND BUSINESS FACULTY

UNIVERSITAS MUHAMMADIYAH SURAKARTA

2020

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PUBLICATION LETTER

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Research has been accepted and approved.

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh internet banking terhadap kinerja perbankan di Indonesia. Dalam penelitian ini jumlah sampel 36 bank di Indonesia dan sumber data dalam penelitian ini adalah metode data sekunder berdasarkan laporan keuangan tahunan bank-bank di Indonesia yang terdaftar di Bursa Efek Indonesia periode 2016 hingga 2018. Analisis data yang digunakan adalah uji regresi linier berganda untuk mengetahui pengaruh Internet Banking, Size, Equity, Pinjaman, Biaya Operasional, Spread, Bank BUMN, dan Inflasi terhadap kinerja perbankan. Hasil penelitian menunjukkan bahwa Internet Banking, Size, Equity, dan Operating Cost berpengaruh signifikan terhadap profitabilitas bank di Indonesia. Sedangkan Kredit, Spread, Bank BUMN, dan Inflasi tidak berpengaruh signifikan terhadap profitabilitas bank-bank di Indonesia.

Kata Kunci: Kinerja Perbankan, Internet Banking, Profitabilitas, Rasio Perbankan.

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Abstract

This research aimed to analyze the effect of internet banking on banking performance in Indonesia. In this study, a total sample of 36 banks in Indonesia and the data sources in this study are secondary data methods based on the annual financial reports of banks in Indonesia listed on the Indonesia Stock Exchange for the period 2016 to 2018. The analysis of the data used is multiple linear regression tests to determine the effect of Internet Banking, Size, Equity, Loans, Operating Costs, Spreads, State-owned Banks, and Inflation on banking performance. The results show that Internet Banking, Size, Equity, and Operating Cost have significant effect on profitability of banks in Indonesia. Meanwhile, Loans, Spreads, State-owned Banks, and Inflation have no significant effect on profitability of banks in Indonesia.

Keywords: Banking Performance, Internet Banking, Profitability, Banking Ratio

1. INTRODUCTION

The development of the banking world is currently running very rapidly. This is much influenced by several factors, one of which is technological factors. Current technological developments in the banking world have become a necessity, where there are currently many customers who need efficient and fast facilities from the banking sector. This requires banks to continue to create new technologies to improve the quality of banking performance.

Understanding banking, Law of the Republic of Indonesia Number 10 of 1998, Article 1 paragraph (1) concerning Banking:

"Banking is everything that is of concern to the Bank, including institutions, business activities and ways and processes in carrying out their business activities".

While in the technology-based banking sector, one of them is Internet Banking. According to Karen Furst, Internet Banking is the use of the internet as a long-distance shipping channel for banking services, including traditional services, such as opening deposit accounts or transferring funds between different accounts, as well as new banking services, such as presenting electronic bills and payments, which allow customers to receive and pay bills through the bank's website (Riswandi, 2005: 20).

According to Carlson (2000) whereas in the long run, the benefits of banks that are integrated with internet banking services, banks can compete in new markets, gain more access to new customers and develop existing market shares. The development of banking technology makes it easier and cheaper for customers to compare products offered and to build banking relationships that are closer to customers.

Some banks speculate that with the presence of Internet Banking, banks will benefit more in terms of income than banks that do not have Internet Banking. This is because with Internet Banking, it will reduce the number of paper expenses when making transactions at the bank. Besides, more customers will often conduct banking transactions anywhere and anytime, without having to wait for the bank to open. With the existence of Internet Banking, banks can be said to be more advanced in satisfying customers to make transactions. Even in this globalization era, many prospective customers prefer to register as customers in banks that have used Internet Banking.

Another benefit that can be felt by the community with the internet banking service is that they can conduct financial transactions using only the internet network, such as transferring funds to others or other banks, paying electricity, telephone or credit card bills, transferring accounts to get exchange rate information foreign. Besides, many internet banking services can be accessed for 24 hours, which makes it easy for customers to make financial transactions without having to go to a bank or ATM.

This topic was raised by researchers because there was not much research conducted in Indonesia. The researcher wants to prove the influence of internet banking services provided by banks in Indonesia with ROA (Return on Assets).

1.1. Literature Review

In this era, the internet is very easy for its users, one of which is in the banking sector. According to Karen Furst, Internet Banking is the use of the internet as a remote delivery channel for banking services, including traditional services, such as opening a deposit account or transferring funds among different account, as well as new banking services, such as electronic bill presentment and payment, which allow customers to receive and pay bill over bank’s website (Riswandi, 2005:20). According to Efraim Turban, Online Banking, includes various banking activities conducted from home, business, or on the road instead of at a physical bank location” (Riswandi, 2005:21).

According to Guru et al (2000), (Al-Smadi, Al-Wabel, 2011) said that large banks are more likely to provide larger loans to the asset market than small banks so that profits created are greater than small banks. This study uses size as a measurement for assets. The size here is the logarithm of the bank's assets. While, according to Ibrahim (2008) The size of the company is a representation of the size of the company in terms of nominal ratios such as total assets and total sales of companies in one sales period or market capital. Investors can use the classification of companies based on their scale of operations as a determining variable.

Self capital as equity in which equity capital is capital collected by selling ordinary shares that represent company ownership (Ball and Mc Culloch, 2001). Equity is typically referred to as shareholder equity (also known as shareholders' equity) which represents the amount of money that would be returned to a company’s shareholders if all of the assets were liquidated and all of the company's debt was paid off. Equity is found on a company's balance sheet and is one of the most common financial metrics employed by analysis to assess the financial health of a company. Shareholder equity can also represent the book value of a company.

Ismail (2010: 177) defined loan to deposit ratio is a mechanism that is applied to protect the company from risk or to minimize the impact of risk on the company if the risk occurs.

Operating expenses are the overall costs associated with operations outside the production process activities including (1) costs of sales and (2) administrative and general costs (Margaretha, 2011). Operating costs are expenses associated with the maintenance and administration of a business on a day-to-day basis. The total operating cost for a company includes the cost of goods sold, operating expenses as well as overhead expenses. The operating cost is deducted from revenue to arrive at operating income and is reflected on a company’s income statement.

Net Interest Margin (NIM), which is a ratio used to measure the number of net interest income obtained by banks in using productive assets (Achmad and Kusumo, 2003). The NIM ratio shows the ability of bank management to manage their productive assets to generate net interest income. Net interest income is derived from interest income less interest expense. The greater the ratio, the higher the interest income on earning assets managed by banks so that the possibility of banks in problematic conditions is getting smaller (Almilia and Herdiningtyas, 2005). Net interest margin is similar in concept to net interest spread, but the net interest spread is the nominal average difference between the borrowing and the lending rates, without compensating for the fact that the earning assets and the borrowed funds may be different instruments and differ in volume.

Decree of the Minister of Administrative Reform No. 63 of 2003 defined the public sector as "all forms of services carried out by government agencies at the Center, in the regions and within the State-Owned Enterprises or Regionally-Owned Enterprises in the form of goods or services, both in the context of fulfilling community needs and in the implementation statutory provisions". According to Ellen Brown (2013: 3), public ownership of a bank is distinct from socialism in that the latter is government ownership of the means of production, whereas public banking involves government oversight of the credit and debit system that facilities economic exchange, including that of free markets.

Inflation is a general rise in the price level in an economy over a period of time, resulting in a sustained drop in the purchasing power of money. When the general price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power per unit of money – a loss of real value in the medium of exchange and unit of account within the economy, Paul et al. (1973).

The return on assets (ROA) shows the percentage of how profitable a company’s assets are in generating revenue, Susan et al. (2008: 209). This number tells you what the company can do with it has, i.e. how many dollars of earnings they derive from each dollar of assets they control. It’s useful number for comparing competing companies in the same industry. The number will vary widely across different industries.

2. RESEARCH METHOD

This research used a quantitative method with a descriptive analysis that uses multiple regression analysis techniques with the help of the Statistical Package for Social Sciences (SPSS). The quantitative data in this study are in the form of bank financial reports that have been listed on the Indonesia Stock Exchange for the period 2016 until 2018.

The data collection sources in this study are secondary data. Data is taken from bank financial reports on the Indonesia Stock Exchange for the period 2016 until 2018. To determine the sample was taken by purposive sampling. Based on the sample criteria, the number of samples that are eligible for use in the study is 36 banks or 108 observations.

The variable used by researchers in this study consisted of nine variables. There are eight independent variables (X) namely Internet Banking (X1), Size (X2), Equity (X3), Loans (X4), Operating Cost (X5), Spread (X6), State-owned (X7), Inflation (X8). While for dependent variable (Y) there is one variable, namely Return on Assets.

3. RESULT AND DISCUSSION

3.1 Regression Analysis

Table 1. The Results of the Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.109	.047		-2.327	.022
INTERNET (X1)	.013	.006	.224	2.120	.037
SIZE (X2)	.003	.002	.314	2.188	.031
EQUITY (X3)	.032	.012	.291	2.722	.008
LOANS (X4)	.021	.023	.077	.901	.370
OPCOST(X5)	-.030	.012	-.242	-2.478	.015
SPREAD (X6)	.032	.018	.158	1.791	.076
STATEOWNED (X7)	.007	.006	.123	1.246	.216
INFLATION (X8)	.007	.007	.088	1.073	.286

Source: Secondary data processed using SPSS, 2020

From table 1 which is the result of multiple linear regression testing, the following equation can be made:

$$\mathbf{Y = -0.109 + 0.013X_1 + 0.003X_2 + 0.032X_3 + 0.021X_4 - 0.030X_5 + 0.032X_6 + 0.007X_7 + 0.007X_8 + e}$$

Based on the regression equation above, a regression test interpretation can be made with the following dummy variables:

For banks that implement non-internet banking which is listed on the Indonesia Stock Exchange for the period 2016 to 2018, there will be an increase in Return on Assets of -0.109 or -10.9%, while banks that apply internet banking and are included in the private sector category listed in The Indonesia Stock Exchange from 2016 to 2018 will experience an increase in Return on Assets of -0.109 + 0.013 = -0.096 or -9.6%

For banks that apply non-internet banking and are included in the state-owned sector listed on the Indonesia Stock Exchange for the period 2016 to 2018, there will be an increase in Return on Assets of -0.109 + 0.007 = -0.102 or -10.2%, while banking who apply internet banking and are included in the state-owned sector listed on the Indonesia Stock Exchange for the period 2016 to 2018 will experience an increase in Return on Assets of -0.096 + 0.007 = -0.089 or -8.9%.

3.2 Coefficient of Determination (R^2)

Table 2. The Result of the Coefficient Determination Test Results (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.589	0.346	0.294	0.018

Source: Secondary data processed using SPSS, 2020

The results of the table show that the R Square (R^2) is 0.346 and the adjusted R2 value is 0.294. This means that Internet banking, size, equity, loans, operating cost, spread, state-owned sector, and inflation contributed 29.4% to (ROA) Return on Assets in go public banking companies listed on the Indonesia

Stock Exchange during the period. 2016 to 2018. While the rest (100% - 29.4% = 70.6%) is explained by other factors outside the model.

3.3 F-test

Table 3. The Result of the F-test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.017	8	.002	6.559	.000
	Residual	.032	99	.000		
	Total	.048	107			

Source: Secondary data processed using SPSS, 2020

The F-test results show that the calculated F value is 6.559 with a significance level of 0.000, far below 0.05 or 0.000 < 0.05. While the results of the F table = (k; n-k) = (8; 108 - 8) = (8; 100), the F-table is 2.03. Then the results obtained F-value > F-table = 6.559 > 2.03, then the effect of the variable simultaneously is said to be significant and Ha can be accepted. So, it can be concluded that Internet banking, size, equity, loans, operating cost, spread, state-owned sector, and inflation simultaneously have a significant effect on ROA (Return on Assets) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

3.4 t-Test

Table 4. The Results of the t-Test

t-Test Statistics	**B**	t_{value}	t_{table}	**Sig**	**Conclusion**
(Constant)	-0.109				
INTERNET	0.013	2.120	1.984	0.037	H_1 is accepted
SIZE	0.003	2.188	1.984	0.031	H_2 is accepted
EQUITY	0.032	2.722	1.984	0.008	H_3 is accepted
LOANS	0.021	0.901	1.984	0.370	H_4 is rejected
OPCOST	-0.030	-2.478	1.984	0.015	H_5 is accepted
SPREAD	0.032	1.791	1.984	0.076	H_6 is rejected
STATEOWNED	0.007	1.246	1.984	0.216	H_7 is rejected
INFLATION	0.007	0.088	1.984	0286	H_8 is rejected

Source: Secondary data processed using SPSS, 2020

The results of the t-test are presented in table 4. The t-table results obtained from this t-test study are (α / 2; n - k - 1) = (0.05 / 2; 108 - 8 - 1) with a result of 1.9842.

Internet banking variable, the t-value is 2.120 with a significant value of 0.037. Therefore, the t-value > t-table (2.120 > 1.984) and a significance value < 0.05 so that H_1 is accepted, it means that internet banking has a significant and positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

Size variable, the t-value is 2.188 with a significant value of 0.031. Therefore, the t-value > t-table (2.188 > 1.984) and a significance value < 0.05 so that H_2 is accepted, it means that size has a significant and positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 until 2018.

Equity variable has t-value is 2.722 with a significant value of 0.008. Therefore, the t-value > t-table (2.722 > 1.984) and a significance value < 0.05 so that H_3 is accepted, it means that equity has a significant and positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

Loans variable, the t value is 0.901 with a significant value of 0.370. Therefore, the t value < t-table (0.901 < 1.984) and the significance value > 0.05 so that H_4 is rejected, it means that loans have no significant effect and there is a positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

Operating cost variable, the t-value is -2.478 with a significance value of 0.015. Therefore, the t-value < t-table (2.478 > 1.984) and a significance value of < 0.05 so that H_5 is accepted, it means that operating costs have a significant and negative effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

Spread variable, the t-value is 1.791 with a significant value of 0.076. Therefore, the t-value < t-table (1.791 < 1.984) and the significance value > 0.05 so that H_6 is rejected, it means that spread has no significant effect and there is a positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

State-owned sector variable, the t-value is 1.246 with a significant value of 0.216. Therefore, the t-value < t-table (1.246 < 1.984) and the significance value > 0.05 so that H_7 is rejected, it means that the state-owned sector has no significant effect and there is a positive effect on Return on Assets (ROA) in go public banking companies listed in Indonesia Stock Exchange for the period 2016 to 2018.

Inflation variable, the t-value is 0.088 with a significant value of 0.286. Therefore, the t-value < t-table (0.088 < 1.984) and the significance value > 0.05 so that H_8 is rejected, it means that inflation has no significant effect and there is a positive effect on Return on Assets (ROA) in go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018.

3.5 Discussion

1. The Effect of Internet Banking on Bank Performance (ROA)

The result of regression analysis model 1 show that the significant value is 0.037 < 0.05 and t-value is 2.120, it means that internet banking has a significant and positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study are in line with the previous research conducted by Al-Smadi, M., & Al-Wabel, S. (2011) who examined the effect of internet banking on banking performance, stating that the coefficient associated with internet banking dummy will show a possible relationship between internet banking and banking performance. A positive sign for the expected variable, because internet banking has the potential to reduce costs so that it can generate greater.

2. The Effect of Size on Bank Performance (ROA)

The result of regression analysis model 1 show that the significant value is 0.031 < 0.05 and t-value is 2.188, it means that size has a significant and positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study are supported by research conducted by Egan, Ronaldo and Hudi Prawoto (2013) which examined the effect of size on earnings growth, stating that the results of testing between Size variables on earnings growth show a significant effect between sizes on earnings growth. A positive coefficient means that most of the data tested in the study period show that increasing SIZE can affect the increase in profit.

3. The Effect of Equity on Bank Performance (ROA)

The result of regression analysis model 1 show that the significant value is 0.008 < 0.05 and t-value is 2.720, it means that equity has a significant and positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study are supported by research conducted by Syarifudin (2014) which examined the effect of equity to assets on the profitability of banking performance, stating that the variable equity to assets has a significant positive effect on the dependent variable performance of commercial banks. Equity to Assets shows how much capital power a bank has. With greater capital, banks can reduce funding costs and have a smaller risk of bankruptcy. Besides, banks can also grow the business to be bigger when the equity to assets is higher. This makes equity to assets have a positive relationship with profitability.

4. The Effect of Loans on Bank Performance (ROA)

The result of regression analysis model 1 show that the significant value is 0.370 > 0.05 and t-value is 0.901, it means that loans has no significant and there is a positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study are supported by research conducted by Syarifudin (2014) which examined the effect of loan growth on the profitability of banking performance, stating that the variable loan growth has a positive effect on the dependent variable of commercial bank performance in Indonesia, but it is not significant. Banks in Indonesia are very dependent on interest as their source of income. Thus, increasing loan growth will also increase interest income. This has a positive impact on profitability.

5. The Effect of Operating Cost on Bank Performance (ROA)

The result of regression analysis show that the significant value is 0.015 > 0.05 and t-value is -2.478, it means that operating cost has a significant and negative effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study are supported by research conducted by Zakaria (2012) which examined the effect of operating costs on profitability, stating that the personnel burden on banks with internet banking is proven to be significantly lower than non-internet banking and has a negative effect on profitability. This indicates that the application of internet banking helps banks reduce labor costs. In contrast to the expenses incurred for fixed assets, banks with internet banking actually incur more expenses related to fixed assets. Thus, it means that the application of internet banking requires additional fixed assets and costs to operate. In terms of the pattern of financing for assets, banks with internet banking are significantly lower in relying on their asset financing from savings and time deposits compared to non-internet banking.

6. The Effect of Spread on Bank Performance (ROA)

The result of regression analysis show that the significant value is 0.076 > 0.05 and t-value is 1.791, it means that spread has no significant and there is a positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study support the research conducted by Syarifudin (2014) which examined the effect of interest rate spread on the performance of commercial banks. The results obtained from this research model that the control variable interest rate spread significantly has a positive influence on the dependent variable on the performance of commercial banks. This indicates that the higher value of the interest rate spread will improve the performance of commercial banks. This shows that banks are very dependent on interest as their main source of income.

7. The Effect of State-owned Bank on Bank Performance (ROA)

The result of regression analysis show that the significant value is 0.216 > 0.05 and t-value is 1.246, it means that spread has no significant and there is a positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study support the research conducted by (Malhotra and Singh, 2009) who examined the effect of internet banking and non-internet banking with the public sector category on the profitability of banking performance, stating that internet banks in the public sector, particularly, in nationalized bank category are more profitable than non-Internet banks. Comparatively, both the categories of private sector Internet banks are less profitable than non-Internet banks but the difference is not statistically significant. The lower profitability of these banks may be due to higher operating expenses, both fixed cost as well as labor cost.

8. The Effect of Inflation on Bank Performance (ROA)

The result of regression analysis show that the significant value is 0.286 > 0.05 and t-value is 0.088, it means that spread has no significant and there is a positive effect on Return on Assets (ROA) in the go public banking companies listed on the Indonesia Stock Exchange for the period 2016 to 2018. The results of this study support the research conducted by Flamini et al. (2009) through (Al-Smadi, Al-Wabel, 2011) which examined the effect of inflation on profitability, showed that the extent to which inflation affects bank profitability depends on whether future inflation movements are anticipated or unexpected. If inflation is anticipated and interest rates are adjusted so that income, which increases faster than costs, then it might have a positive impact on profitability, while unexpected changes can increase costs because adjustments to interest rates are not perfect. The researcher measures inflation (INF) with the rate of change in the Consumer Price Index (CPI).

4. CONCLUSION

4.1 Conclusion

Based on the results of the data analysis and the discussions above, the conclusions that have been constructed include Internet Banking, Size, Equity, and Operating Cost have significant effect on profitability of banks in the go public banking companies in Indonesia that have been listed on the Indonesia Stock Exchange for the period 2016 to 2018. Meanwhile, Loans, Spreads, State-owned Banks, and Inflation have no significant effect on profitability of banks in the go public banking companies in Indonesia that have been listed on the Indonesia Stock Exchange for the period 2016 to 2018.

4.2 Research Limitations

Based on the results of this study and also based on the various limitations of the existing research, the limitations of this study are as follows:

1. Several variables might produce not significant result or reject the hypothesis, because testing period is only carried out for 3 years.
2. The sample used in this study only focuses on state-owned banks and private banks sectors listed on the Indonesia Stock Exchange. So that the research results cannot represent all internet banking and non-internet banking in Indonesia.

4.3 Suggestion

a. Suggestion for Banking in Indonesia

The application of internet banking has been shown to significantly increase the company's profitability. Based on the order of influence from highest to smallest significance. The highest significance value is equity, equity to asset of banking in Indonesia showed how much capital power a bank has. It can be said that the greater the capital, banks can develop their business to be bigger. Operating cost of banking in Indonesia has a negative effect, it can be said that with the lower operating costs incurred by the company so the profit will be greater. Size of banking in Indonesia is measured the total assets of the company, where the greater the total assets, the company can invest properly and product demand can be met, so it can achieve market share will be wider. Internet banking of banking in Indonesia have mean difference higher than non-internet banking, it can be said that banks that apply internet banking have better profitability than banks that implement non-internet banking. From several of these aspects have an influence on profitability of banking performance. This can be used as a material for management's consideration in investing in internet banking to increase profitability in the long term.

b.Suggestion for Further Researcher

Based on the limitations of the study, there are several suggestions for future researchers:

1. For further research, it is advisable to extend the research period to get better analysis results.
2. Further research is expected not only to focus on state-owned bank and private sector, but all internet banking and non-internet banking banks in Indonesia as research samples, so that the results obtained can represent all banking industries in Indonesia.

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